

HOMEOWNER'S MANUAL

Onsite Wastewater Collection & Treatment Systems

How to Take Care of Your Wastewater System



Orenco Systems®
Incorporated

*Changing the Way the
World Does Wastewater®*

800-348-9843
www.orenco.com
www.vericomm.net

How to Take Care of Your Wastewater System

Congratulations!

Your home includes reliable, carefully engineered equipment — manufactured by Orenco Systems®, Inc. — for the collection and/or treatment of household wastewater.



And your service provider should have a copy of this manual. It's available on our Document Library, at www.orenco.com. Or call 800-348-9843 and we'll send you another.

When properly designed and installed, onsite wastewater treatment does a terrific job of decomposing household waste and recycling precious water resources. Our systems use little energy and frequently outperform municipal sewage treatment plants. The treated effluent is often returned harmlessly to the soil, where it receives final polishing and filtration for groundwater recharge. There's no degrading of our nation's rivers and oceans . . . which is so often the case with municipal sewage.

As with any engineered system, such as your car or your heat pump, your onsite wastewater system will work better and last longer if it is regularly maintained by a qualified service provider. Your service provider should be present during installation, so he or she is familiar with your system, especially those service lines, conduits, and connections that get buried.

Your system will also work better and last longer if you learn what can go into it — and what can not. Little effort is required. Just read and practice the “do's and don'ts” that follow. Every member of your household should be familiar with these. And if you have guests who want to “help out in the kitchen,” be sure to tell them, too. With this preventive maintenance, along with periodic inspections, your onsite wastewater system should function for decades. And you'll save water and energy, too!

There's a place on the back of this Homeowner's Manual to record “Important System Facts.” If those have not been filled in for you, please record those now, before you file or shelve this manual. And give a copy of these facts to your service provider, especially if your service provider changes. You'll be glad you did.

Do's and Don'ts for INSIDE the House

There are a number of do's and don'ts that will help ensure a long life and minimal maintenance for your system. As a general rule, nothing should be disposed into any wastewater system that hasn't first been ingested, other than toilet tissue, mild detergents, and wash water. Here are some additional guidelines.



Don't flush dangerous and damaging substances into your wastewater treatment system. (Please refer to the "Substitutes for Household Hazardous Waste," on the next panel.) Specifically, do not flush . . .

- Pharmaceuticals
- Excessive amounts of bath or body oils
- Water softener backwash
- Flammable or toxic products
- Household cleaners, especially floor wax and rug cleaners
- Chlorine bleach, chlorides, and pool or spa products
- Pesticides, herbicides, agricultural chemicals, or fertilizers



Do keep lint out of your wastewater treatment system by cleaning the lint filters on your washing machine and dryer before every load. Installing a supplemental lint filter on your washing machine would be a good precautionary measure. (This normally takes just a few minutes. Lint and other such materials can make a big difference in the frequency and cost of pumping out your primary treatment tank.)



Don't use special additives that are touted to enhance the performance of your tank or system. Additives can cause major damage to other areas in the collection system. The natural microorganisms that grow in your system generate their own enzymes that are sufficient for breaking down and digesting nutrients in the wastewater.



Don't ignore leaky plumbing fixtures; repair them. A leaky toilet can waste up to 2,000 gallons of water in a single day. That's 10-20 times more water than a household's typical daily usage. Leaky plumbing fixtures increase your water bill, waste natural resources, and overload your system.



Don't leave interior faucets on to protect water lines during cold spells. A running faucet can easily increase your wastewater flow by 1,000 to 3,000 gallons per day and hydraulically overload your system. Instead, properly insulate or heat your faucets and plumbing.



Do collect grease in a container and dispose with your trash. And avoid using garbage disposals excessively. Compost scraps or dispose with your trash, also. Food by-products accelerate the need for septage pumping and increase maintenance.



Do use your trash can to dispose of substances that cause maintenance problems and/or increase the need for septage pumping. Dispose of the following with your trash:

- Egg shells, cantaloupe seeds, gum, coffee grounds
- Tea bags, chewing tobacco, cigarette butts
- Paper towels, newspapers, sanitary napkins, diapers, kitty litter, candy wrappers
- Rags, large amounts of hair

Do's and Don'ts for INSIDE the House



Don't use excessive amounts of water. Using 50 gallons per person per day is typical. If your household does not practice any of the “water conserving tips” below, you may be using too much water.

Do conserve water:

- Take shorter showers or take baths with a partially filled tub. Be cautious about excessive use of large soaking tubs.
- Don't let water run unnecessarily while brushing teeth or washing hands, food, dishes, etc.
- Wash dishes and clothes when you have a full load.
- When possible, avoid doing several loads in one day.
- Use water-saving devices on faucets and showerheads.
- When replacing old toilets, buy low-flush models.



Do use substitutes for household hazardous waste. Replace the following hazardous products with products that are less environmentally harmful. The hazardous cleaners are listed below, followed by the suggested substitute.

Ammonia-based cleaners:

Sprinkle baking soda on a damp sponge. For windows, use a solution of 2 tbs white vinegar to 1 qt water. Pour the mixture into a spray bottle.

Disinfectants:

Use borax: 1/2 cup in a gallon of water; deodorizes also.

Drain decloggers:

Use a plunger or metal snake, or remove and clean trap.

Scouring cleaners & powders:

Sprinkle baking soda on a damp sponge or add 4 tbs baking soda to 1 qt warm water. Or use Bon Ami; it's cheaper and won't scratch.

Carpet/upholstery cleaners:

Sprinkle dry cornstarch or baking soda on, then vacuum. For tougher stains, blot with white vinegar in soapy water.

Toilet cleaners:

Sprinkle on baking soda or Bon Ami; then scrub with a toilet brush.

Furniture/floor polishes:

To clean, use oil soap and warm water. Dry with soft cloth. Polish with 1 part lemon juice and 2 parts oil (any kind), or use natural products with lemon oil or beeswax in mineral oil.

Metal cleaners:

- Brass and copper: scrub with a used half of lemon dipped in salt.
- Stainless steel: use scouring pad and soapy water.
- Silver: rub gently with toothpaste and soft wet cloth.

Oven cleaners:

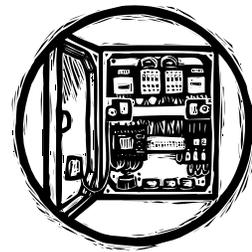
Quickly sprinkle salt on drips; then scrub. Use baking soda and scouring pads on older spills.



Laundry detergents:

Choose a liquid detergent (not a powder) that doesn't have chlorine or phosphates.

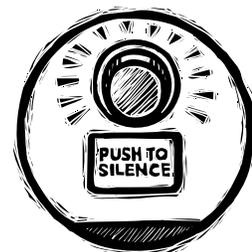
At the Control Panel



Do locate your electrical control panel where it will be protected from potential vandalism and have unobstructed access.

Do familiarize yourself with the location of your wastewater system and electrical control panel. Refer to the panel's model and UL number (inside the door panel) when reporting a malfunction in the system.

Do take immediate action to correct the problem in the event of an alarm condition. Call your system operator or maintenance company immediately whenever an alarm comes on. (It sounds like a smoke alarm.)



Do remember that the audible alarm can be silenced by pushing the lighted button located directly above the “Push to Silence” label on the front of the electrical control panel. With normal use, the tank has a reserve storage capacity good for 24-48 hours.

Don't turn off the main circuit breaker to the wastewater pumps when going on vacation. If there is any infiltration or inflow into the system, the pumps will need to handle it.

Do's and Don'ts for OUTSIDE the House



Don't enter your tank. Entering an underground tank without the necessary confined space entry training and procedures can result in death from asphyxiation or drowning. Keep children away from tank openings if lids are off or lid bolts are removed.

Do keep the tank access lid fastened to the riser at all times with stainless steel lid bolts. If the lid or riser becomes damaged, **BLOCK ACCESS TO THE TANK OPENING, IMMEDIATELY.**

Then call your service provider to repair it. If you or your service provider needs replacement bolts, call Orenco at 800-348-9843.



Don't dump RV waste into your wastewater system. It will increase the frequency of required septage pumping. When dumped directly into the pumping vault, RV waste clogs or fouls equipment, causing undue maintenance and repair costs. (Also, some RV waste may contain chemicals that are toxic or that may retard the biological digestion occurring within the tank.)

Don't ever connect rain gutters or storm drains to the sewer or allow surface water to drain into it. And don't discharge hot-tub water into your system. The additional water will increase costs, reduce the capacity of the collection and treatment systems, and flood the drainfield. It can also wash excess solids through the tank.



Don't dig without knowing the location of your wastewater system. As much as possible, plan landscaping and permanent outdoor structures before installation. But easily removable items, such as bird baths and picnic tables, are OK to place on top of your system.



Do make arrangements with a reliable service person to provide regular monitoring and maintenance. Place the service person's phone number on or in your control panel!

Do keep a file copy of your service provider's sludge and scum monitoring report and pumpout schedule. This information will be beneficial for real estate transactions or regulatory visits.

Do keep an "as built" system diagram in a safe place for reference.



Don't drive over your tank or any buried components in your system, unless it's been equipped with a special traffic lid. If the system is subject to possible traffic, put up a barricade or a row of shrubs.

IMPORTANT! CAUTION!

Only a qualified electrician or authorized installer/operator should work on your control panel. Before anyone does any work on either the wiring to the level control floats and pumps in the vault or on the control panel itself, it is imperative to first switch the isolation fuse/breaker and the circuit breakers in the panel to the "Off" positions, then switch "Off" the power to the system at the main breaker!

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Do keep accurate records of maintenance and service calls. Make sure whoever services your tank keeps a complete record, and ask for a copy for your records.



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IMPORTANT SYSTEM FACTS

Distributor or Dealer:

Please fill out the following important information before giving out this Homeowner's Manual:

Distributor/Dealer Name

Permit # (if applicable)

Distributor/Dealer Address

Property Address

Distributor/Dealer Phone Number(s)

Property Owner Name(s)

Authorized Service Provider Name

Start-Up Date

Authorized Service Provider Phone Number(s)

Control Panel Model # and UL #

Authorized Installer Name

AdvanTex® Model # (if applicable)

Authorized Installer Phone Number(s)

AdvanTex® Serial # (if applicable)

Engineer Name (if applicable)



AdvanTex®
Treatment System
AXN Models meet
the requirements of
NSF-ANSI Standard 40
for Class I Systems.

Engineer Phone Number(s)

Regulatory Agency

Regulatory Contact Name

Regulatory Contact Phone Number(s)

ProSTEP™

Effluent Pumping Systems



for
Onsite
Wastewater
Collection
and
Treatment



Ideal for:

- Effluent sewers
- Drainfields
- Textile filters
- Sand filters
- Peat filters
- Mounds
- Trickling filters
- Aerobic units
- Wetlands
- Lagoons
- Effluent irrigation
- Other applications



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ProSTEP™ Protects, Transports, Filters

More than twenty years ago, Orenco Systems®, Inc. pioneered and packaged the modern filtering pump vault for onsite wastewater collection and treatment. Today, about 150,000 ProSTEP Effluent Pumping Systems are in service all over the world. They transport and filter wastewater from watertight septic tanks and dosing tanks, protecting “downstream” lines, drainfields, and other treatment systems. The pump vault’s patented* Biotube® filter has several times the capacity of other filters and removes about two-thirds of suspended solids, on average.

“Easy Access” Design Aids Maintenance

The pump vault’s “easy access” design allows service providers to remove the Biotube® filter cartridge without pulling the pump or vault. And the float assembly’s quick-release float stem and adjustable float collars make it easy to remove and adjust.

Quality Components Outlast Others

ProSTEP™ Effluent Pumping Systems are superior in quality and outlast other brands. Constructed of stainless steel, thermoplastic, and fiberglass, they’re corrosion-resistant and durable, reducing lifetime system costs.

Advanced Controls Available

For a modest incremental cost, advanced control panels are available . . . control panels that give peace of mind to property owners, system designers, contractors, service providers, and regulators. MVP digital programmable panels allow easy, accurate setting of multiple parameters and the use of one type of float for all functions. VeriComm® remote telemetry panels are coupled with the Web-based VeriComm® Monitoring System, which verifies, monitors, records, and communicates system operation round-the-clock, while remaining invisible to the homeowner.

Easy access design



* Covered by U.S. patents
4,439,323 and 5,492,635.
Foreign patents pending.

“We’ve had more than 500 Orenco ProSTEP Effluent Pumping Systems in operation since 1987. They’re simple, dependable, and easy to maintain.”

Larry Garwood
Diamond Lake Water & Sewer District
Newport, Washington

Design, Engineering, and Support

Unmatched Technical Support

When you specify, purchase, install, or service Orenco products, you tap into a wide range of technical support services.

Distributor Network

Orenco's products are available from about 200 different Distributor locations. Distributors stock products, provide customer service, and help with system design, product takeoffs, ordering, shipping, and more. For a list of stocking Distributors, go to www.orenco.com and click on "Distributor Locator."



Orenco Technical Sales and Engineering

If there isn't a Distributor in your region, Orenco's Tech Sales and Engineering staff provide professional customer service, including plan reviews. When you call our toll-free number for information and assistance, you'll talk to a wastewater specialist with practical experience in effluent pumping system design, construction, and maintenance.



Design Aid CD-ROM

Our Design Aid CD-ROM saves layout and drafting time. The CD-ROM includes more than 200 scaled AutoCAD® and PDF drawings and our exclusive Pump Select™ software that provides fast, error-free hydraulic calculations for pump sizing. It also includes our General Specifications document, as well as media gradation charts for use when designing sand and gravel filters.

Supportive Literature

Each ProSTEP™ Effluent Pumping System comes with installation and maintenance instructions. There's also a Homeowner's Manual for the property owner (available in English and Spanish), with Do's and Don'ts for preventive maintenance. Spec sheets, product sheets, and additional color brochures are also available, by request.



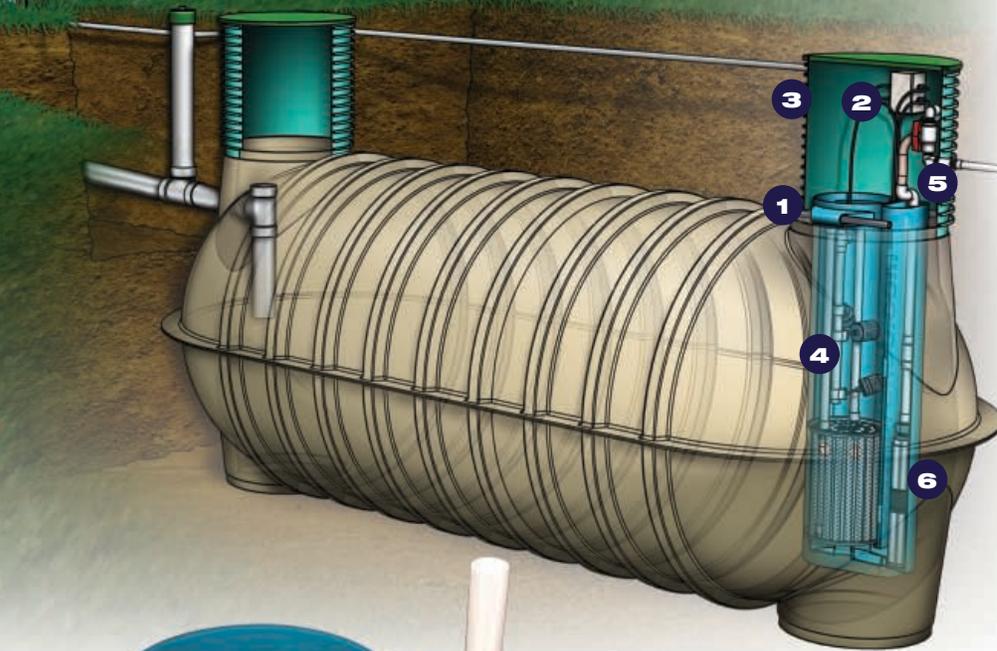
Web Sites Orenco maintains two Web sites

- www.orenco.com includes an extensive document library and lets you e-mail questions and view/print product and system information round-the-clock.
- www.vericomm.net (coupled with our VeriComm® telemetry control panels), allows password-holders to manage alarms and monitor/control their systems remotely. (See our online demo on the home page; no password required.)

ProSTEP™ System Components

Complete, Lightweight Package

ProSTEP Effluent Pumping Systems are a fully integrated package with seven compatible components. No need to shop for parts and pieces. In-tank equipment is lightweight, comes preassembled, and installs neatly into our tanks and most others, saving time and money.



Orenco's Injection-Molded Fiberglass Tanks are 100% watertight and water-tested, and they're strong enough to resist 4-foot (1.2-meter) burial, empty, with groundwater to grade. Available in 1000-gal and 1500-gal sizes (3785 L and 5678 L).

1 Biotube® Pump Vault

- Pump vault comes in standard and custom heights
- Handle assembly aids removal of filter cartridge
- Biotube filter goes longer between cleanings than other brands
- External flow inducer accommodates one or two pumps
- Removable float stem keeps floats in proper positions

2 Splice Box

- Two kinds available:
 - ~ Internal (see drawing at top of page)
 - ~ External (see photo below)
- Advantages of the External Splice Box:
 - ~ Mounts outside riser, flush-to-ground
 - ~ Protects external wiring
 - ~ Easy to access, install, maintain
 - ~ Completely watertight; UL listed, NEMA 6p rated



ProSTEP™ System Components



4 Float Switch Assembly

- Provides level control
- Quick-release stem
- Adjustable float collars
- Variety of floats, float arrangements



6 Effluent Pump

- Life of 25+ years with routine cleaning
- Lasts 3–4 times longer than conventional effluent pumps
- Minimum 24-hour run-dry capability
- Lightweight — about 25 lb (11 kg)
- Easy to service in the field
- Noncorroding stainless steel construction
- UL and CSA listing for wastewater applications
- A variety of pump power/sizes available; low power costs
- Five-year warranty available



7 Control Panel

- Engineered specifically for wastewater applications
- Highest quality “touch safe” components, NEMA 4X-rated enclosures
- “Smart” digital programmable panels and telemetry panels available
- UL and UL-C listed; standard configurations available to meet requirements of NEC Class I, Division 1 or 2
- Three-year warranty

3 Risers, Lids, and Accessories

- Allow easy access to tank
- Attractive, nonskid lids
- Strong and lightweight
- Tamper-resistant
- Custom lid imprinting available for 24 in. (600 mm) and 30 in. (760 mm) sizes



5 Discharge Assembly

- Flexible design eliminates “hard plumbing”
- Typically includes quick disconnect (union or cam-style), ball valve, check valve
- Available for special situations (cold weather, deep bury, etc.)
- Provides easy access



Orenco Systems is owned and managed by engineers who develop wastewater systems that work — systems based on sound science.

Clockwise from left:

Eric Ball, P.E., Jeff Ball, P.E., Hal Ball, P.E.,
(front) Terry Bounds, P.E.

Carefully Engineered by Orenco

Orenco Systems has been researching, designing, manufacturing, and selling leading-edge products for small-scale wastewater treatment systems since 1981. The company has become an industry leader, with nearly 300 employees and with more than 100 distributors and dealers representing most of the United States, Canada, New Zealand, Australia, and parts of Europe. Our products and technologies have been installed in 50 countries, all over the world.



Your health is our priority. At Orenco Systems, we are committed to "Changing the Way the World Does Wastewater®."



Orenco has a maintenance division and an environmental lab and employs dozens of scientists and civil, structural, agricultural, electrical, mechanical, and manufacturing engineers. Orenco's systems are based on sound scientific principles of chemistry, biology, mechanical structure, and hydraulics. As a result, our research appears in numerous publications, and our engineers are regularly asked to give workshops and offer trainings.

Distributed by:



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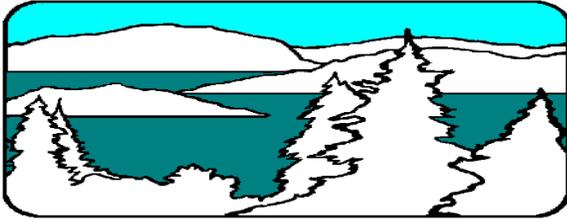
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Orenco Systems®, Inc.



Health & Community Services
San Juan County

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YOUR HOME SEWAGE SYSTEM A Homeowners Maintenance Guide

SYSTEM DO'S

To extend the life of your on-site sewage system, save on maintenance costs, and protect water quality:

1. Inspect your septic tank annually.

Generally, septic tanks should be pumped every three to five years. Inspection, by you or a professional, may show that you need to pump more or less often. Regular pumping ensures that solids will not flow from the septic tank into the drainfield. Solids can destroy the drainfield, and pumping will not bring a failed drainfield back to life.

2. To reduce household water usage:

*Use water-saving bathroom and kitchen fixtures (faucets, showers, toilets).

*Run and drain appliances, such as dishwashers and washing machines, one at a time.

*Spread laundry over the entire week and avoid partial loads.

*Fix all faucet and toilet leaks promptly.

3. Direct water from downspouts and roofs away from the drainfield.

Water from these sources can cause the drainfield to work improperly.

4. Keep cars and trucks off the septic tank and drainfield areas.

This prevents pipes from breaking and soil from becoming compacted. Compacted soils do not readily absorb water from the drainfield.

5. Use phosphate-free detergent.

Phosphate-free detergents help prevent algae problems in nearby ponds, lakes & streams.

SYSTEM DON'TS

To keep your on-site sewage system in proper working order, keep these things in mind:

6. Don't use a garbage disposal.

A garbage disposal adds solids and grease to the system which may lead to drainfield failure.

7. Don't use septic tank additives or "miracle" system cleaners:

Some of these chemicals can actually harm the on-site sewage system by allowing solids to flow into and clog the drainfield. Chemical additives can also contaminate ground and surface water.

8. Don't dispose of water from hot tubs into the on-site sewage system.

The large amount of water is harmful to the system, and the chlorine can destroy important bacteria in the system. Drain hot tubs onto the ground, away from the drainfield and not into a storm drain.

9. Don't flush solid wastes into the on-site sewage system.

These include diapers, cigarette butts, coffee grounds, tampons, condoms, and grease.

10. Don't put strong chemicals, such as cleaning products, down the drain.

Household chemicals such as drain cleaners, paint and paint thinners, floor and sink cleaners and excessive amounts of bleach can destroy important bacteria in the septic tank and contaminate ground and surface water.

11. Don't construct patios, carports, or use landscaping plastic over the drainfield.

Grass is the best cover for the septic tank and drainfield. Soil compaction and paving prevents oxygen from getting into the soil. This oxygen is needed by bacteria to break down or treat sewage.